DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 99.28

WELDING INSPECTION REPORT

Resident Engineer: Siegenthaler, Peter
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-017597
Date Inspected: 22-Oct-2010

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC)

OSM Arrival Time: 700
OSM Departure Time: 1900
Location: Shanghai, China

CWI Name: Li Yang and Zhu Zhong Hai

CWI Present:	☑ Yes	☐ No		**Inspected CWI report:**	☐ Yes	☐ No	☑ N/A	
Rod Oven in Use:	☑ Yes	☐ No	☐ N/A	**Electrode to specification:**	☑ Yes	☐ No	☐ N/A	
Weld Procedures Followed:	☑ Yes	☐ No	☐ N/A	**Qualified Welders:**	☑ Yes	☐ No	☐ N/A	
Verified Joint Fit-up:	☐ Yes	☑ No	☐ N/A	**Approved Drawings:**	☑ Yes	☐ No	☐ N/A	
Approved WPS:	☑ Yes	☐ No	☐ N/A					
Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A					

Bridge No: 34-0006
Component: OBG Trial Assembly

Summary of Items Observed:

On this date Caltrans OSM Quality Assurance (QA) Inspector Mr. S. Manjunath Math was present during the time noted above for observations relative to the work being performed.

This QA Inspector randomly observed the following work in progress:

Orthotropic Box Girder (OBG) at Trial Assembly Areas

Anchorage Bearing Stiffeners at Machine Shop # 1(for Lift 14- East)

This QA Inspector performed Dimension Control Inspection to check and measure the Anchorage Bearing Stiffeners at machine shop # 1. The following dimensional inspection was performed.

The scribe line distances of anchor rod were measured.

The offset were measured from scribe line.

The vertical spacing between the bearing stiffeners at four locations were measured.

The vertical offset between bearing stiffeners at two locations were measured.

The QA Inspector verified the surface condition met the mill to bear condition at MTB1, MTB2 and MTB3

locations.

The Anchorage Bearing Stiffeners piece marks are identified below.

-Anchorage Bearing Stiffeners identified as SA3353F and top plate piece mark identified as X4740F.

The measurements were recorded in the Dimension Control Plan (DCP) on a separate form and submitted to the Lead Inspector and Engineer for review and disposition.

Segment 10BE to 10CE (Transverse Splice T-Ribs)

This QA Inspector witnessed final bolt tension verification on bolts connecting T-Rib to T-Rib for Transverse Splice at Side Panel Bike Path Side (from work point E1 towards E3), Bottom Panel (from work point E3 towards E4) and Cross Beam side (from work point E4 to E6) between Panel Point (PP) 91 to PP 92 for Segment 10BE to Segment 10CE. Inspected the bolt tensioning on a random basis and found the tension to be in general compliance. Inspection was performed against the Notification No. 00518 Dated October 22, 2010.

The bolt sizes used were M22 x 70 RC Lot # DHGM220038 and the final torque value established was 480 N-m.

The Manual Torque wrench used was Serial No. XO2-666.

Segment 10BE to 10CE (Transverse Splice T-Ribs)

This QA Inspector performed Dimension Control Inspection on the Transverse Splice T-Ribs to T-Ribs after bolting for the Segment 10BE to Segment 10CE between Panel Point (PP) 91 to PP 92 at the following locations:

Work Point E1 towards Work Point E3 (Side Panel Bike Path Side) total 19 T-Ribs.

Work Point E4 towards Work Point E6 (Side Panel Cross Beam Side) total 19 T-Ribs.

The QA Inspector measured the Vertical Offset using 1(One) Meter Straight Edge and measured the Horizontal Offset on the web using a Bridge Cam gauge.

The measurements were recorded in the Dimension Control Plan (DCP) on a separate form and submitted to the Lead Inspector and Engineer for review and disposition.

Note: Work Point E3 towards Work Point E4 (Bottom Panel) total 18 T-Ribs, the dimension control inspection after bolting was not performed as (2) two rows and 5 (five) columns of fasteners assembly were installed due to interference with temporary sea fastening structures.

Please reference the pictures attached for more comprehensive details.

Segment 10AE to Segment 10BE (Truss Post and Road Barrier Brackets)

This QA Inspector witnessed the final bolt tension verification on bolts installed at Corner Assembly connecting the Road Barrier Brackets, Inclined Truss Post and Vertical Truss Post at Bike Path side and Cross Beam side between Panel Points (PP) 88 and PP 89 for Segment 10AE to Segment 10BE. The QA Inspector verified the bolt tension on a random basis and the results appeared to be in general compliance. The Inspection was performed against Notification No. 00518 dated October 22, 2010.

The bolt sizes used were M22 x 55 RC Lot # DHGM220011 and the final torque value established was 457 N-m.

The bolt sizes used were M22 x 85 RC Lot # DHGM220109 and the final torque value established was 350 N-m.

The bolt sizes used were M22 x 120 RC Lot # DHGM220053 and the final torque value established was 440 N-m.

The bolt sizes used were M24 x 60 RC Lot # DHGM240014 and the final torque value established was 567 N-m.

The bolt sizes used were M24 x 65 RC Lot # DHGM240013 and the final torque value established was 540 N-m.

The bolt sizes used were M24 x 80 RC Lot # DHGM240011 and the final torque value established was 533 N-m.

The Manual Torque wrench used was Serial No. XO2-666.

Segment 10BE to Segment 10CE (Truss Post and Road Barrier Brackets)

This QA Inspector witnessed the final bolt tension verification on bolts installed at Corner Assembly connecting the Road Barrier Brackets, Inclined Truss Post and Vertical Truss Post at Bike Path side and Cross Beam side between Panel Points (PP) 91 and PP 92 for Segment 10BE to Segment 10CE. The QA Inspector verified the bolt tension on a random basis and the results appeared to be in general compliance. The Inspection was performed against Notification No. 00518 dated October 22, 2010.

The bolt sizes used were M22 x 55 RC Lot # DHGM220011 and the final torque value established was 457 N-m.

The bolt sizes used were M22 x 85 RC Lot # DHGM220109 and the final torque value established was 350 N-m.

The bolt sizes used were M22 x 120 RC Lot # DHGM220053 and the final torque value established was 440 N-m.

The bolt sizes used were M24 x 60 RC Lot # DHGM240014 and the final torque value established was 567 N-m.

The bolt sizes used were M24 x 65 RC Lot # DHGM240013 and the final torque value established was 540 N-m.

The bolt sizes used were M24 x 80 RC Lot # DHGM240011 and the final torque value established was 533 N-m.

The Manual Torque wrench used was Serial No. XO2-666.

Segment 10AE (Connection Clips)

This QA Inspector witnessed the final bolt tension verification on bolts installed at Connection Plates connecting T-Rib flange to Floor Beam at work point E3 and work point E4 at Panel Points (PP) 87 and PP 88 for Segment 10AE. The QA Inspector verified the bolt tension on a random basis and the results appeared to be in general compliance. The Inspection was performed against Notification No. 00518 dated October 22, 2010.

The bolt sizes used were M22 x 80 RC Lot # DHGM220044 and the final torque value established was 473 N-m.

The Manual Torque wrench used was Serial No. XO2-779.

Segment 10CE (Connection Clips)

This QA Inspector witnessed the final bolt tension verification on bolts installed at Connection Plates connecting T-Rib flange to Floor Beam at work point E3 and work point E4 at Panel Points (PP) 92 and PP 93 for Segment 10CE. The QA Inspector verified the bolt tension on a random basis and the results appeared to be in general compliance. The Inspection was performed against Notification No. 00518 dated October 22, 2010.

The bolt sizes used were M22 x 80 RC Lot # DHGM220044 and the final torque value established was 473 N-m.

The Manual Torque wrench used was Serial No. XO2-779.

Bike Path at Bay # 19

This QA Inspector performed Dimension Control Inspection on the Bike Path bottom panel for flatness check and bike path identified as BK4A-011. Inspection was performed after correction by heat straightening.

The QA Inspector measured the flatness using 1500mm long straight edge and observed flatness dimensions out of allowable tolerance.

The results of the inspection were informed to Caltrans Lead Inspector Mr. Mark Miller and ABF Mr. Peter Shaw.

Lift 10 West (X37B and X37C Brackets)

This QA Inspector performed Dimension Control Inspection for the Segment 10AW, Segment 10BW, and Segment 10CW and measured the distance between road barrier bolt hole drilled at X37B and X37C from deck panel to the cope hole at X37B and X37C brackets installed at Corner Assembly at east and west side of the X37B brackets at following locations.

At Panel Points(PP) 85.25 and PP 85.75, Cross Beam side.
At Panel Points(PP) 85.25 and PP 85.75, Counter Weight side.

At Panel Points(PP) 86.25 and PP 86.75, Cross Beam side.
At Panel Points(PP) 86.25 and PP 86.75, Counter Weight side.

At Panel Points(PP) 87.25 and PP 87.75, Cross Beam side.

At Panel Points(PP) 87.25 and PP 87.75, Counter Weight side.

At Panel Points(PP) 88.25 and PP 88.75, Cross Beam side.
At Panel Points(PP) 88.25 and PP 88.75, Counter Weight side.

At Panel Points(PP) 89.25 and PP 89.75, Cross Beam side.
At Panel Points(PP) 89.25 and PP 89.75, Counter Weight side.

At Panel Points(PP) 90.25 and PP 90.75, Cross Beam side.
At Panel Points(PP) 90.25 and PP 90.75, Counter Weight side.

At Panel Points(PP) 91.25 and PP 91.75, Cross Beam side.
At Panel Points(PP) 91.25 and PP 91.75, Counter Weight side.

At Panel Points(PP) 92.25 and PP 92.75, Cross Beam side.
At Panel Points(PP) 92.25 and PP 92.75, Counter Weight side.

At Panel Points(PP) 93.25 and PP 93.75, Cross Beam side.
At Panel Points(PP) 93.25 and PP 93.75, Counter Weight side.

At Panel Points(PP) 94.25 and PP 94.75, Cross Beam side.
At Panel Points(PP) 94.25 and PP 94.75, Counter Weight side.

The measurements were recorded in the Dimension Control Plan (DCP) on a separate form and submitted to the Lead Inspector and Engineer for review and disposition.

Segment 11BW to Segment 11CW (Transverse Splice at Side Panel)

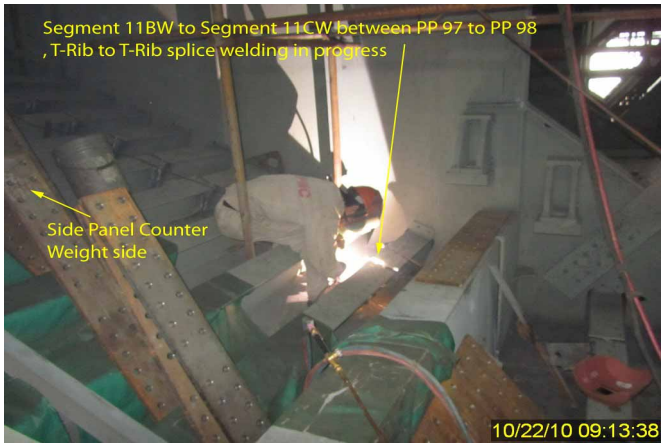
This QA Inspector observed the in-process welding by Shielded Metal Arc Welding (SMAW) process on a Complete Joint Penetration (CJP) groove weld. The Weld joint was designated as SP168-001-045. The welder identification was 040656 and was observed welding in the 3G (Vertical) position using approved Welding Procedure Specification WPS-B-P-2213-B-U2-FCM-1. The piece mark was identified as the Side Panel T-Ribs web at transverse splice weld, counter weight side.

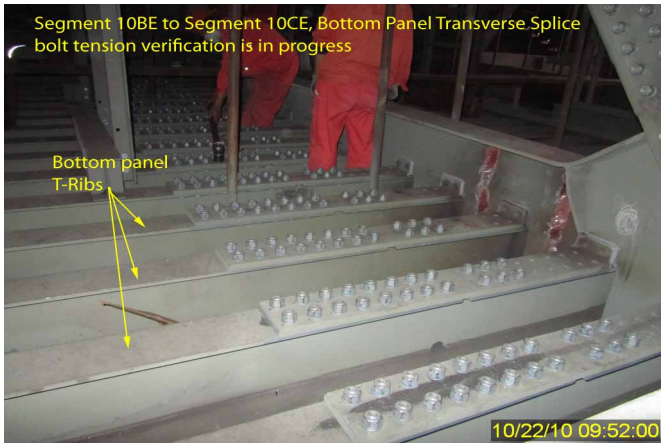
Please reference the pictures attached for more comprehensive details.

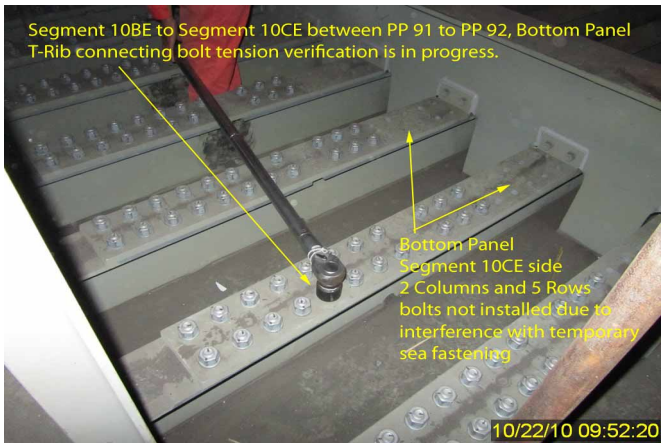
Unless otherwise noted, all work observed on this date appeared to generally comply with applicable contract documents.

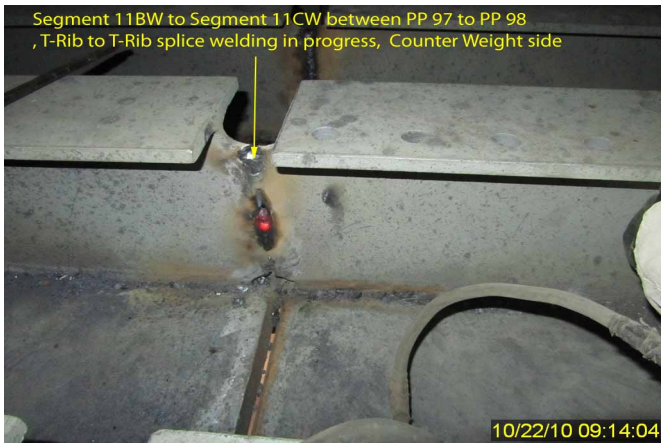
WELDING INSPECTION REPORT

(Continued Page 6 of 6)









Summary of Conversations:

No relevant conversations were reported on this date.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Eric Tsang 150000422372, who represents the Office of Structural Materials for your project.

Inspected By:	Math,Manjunath	Quality Assurance Inspector
Reviewed By:	Peterson,Art	QA Reviewer